Alerts, Notices, and Case Reports

Glutaraldehyde Proctitis

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Every hospital should have a plaque in the physicians' and students' entrance: There are some patients whom we cannot help; there are none we cannot harm.
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THE USE OF flexible sigmoidoscopy has been recommended for screening patients aged 50 and older for colorectal adenomas and cancer.[2] The technique of this examination can be mastered in 20 to 30 training sessions, and thus it is being increasingly used by primary care physicians.[3] Flexible instruments must be carefully cleaned and disinfected after each procedure.[4] We have recently diagnosed three cases of acute proctitis due to glutaraldehyde, a commonly used disinfectant. Although this is a rare complication of flexible sigmoidoscopy, if unrecognized, diagnostic and therapeutic confusion may result.

Report of Cases

Patient 1

The patient, a 56-year-old woman, came in for sigmoidoscopy as part of a physical examination. She was healthy and had no gastrointestinal complaints. Flexible sigmoidoscopy was done with normal results to 50 cm. Eight hours later, she noted tenesmus and bloody diarrhea. The examination was not repeated. She was started on hydrocortisone enemas (Cortenema) once a day and within three days was asymptomatic. Over the next 12 months, she has remained well.

Patient 2

The patient, a 53-year-old man, had flexible sigmoidoscopy as part of an executive health examination. There was no history of gastrointestinal disease. The results of sigmoidoscopy were normal to 40 cm. The next day, he began having abdominal cramps and bloody diarrhea. He returned to the clinic the following morning or 48 hours after the initial examination. A second sigmoidoscopy revealed erythema, edema, and large ulcers to 12 cm. He was treated with a regimen of oral prednisone and metronidazole (Flagyl). Two days later, the patient was asymptomatic and has remained so over a two-month period.

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Patient 3

This 34-year-old woman had colonoscopy done because of a history of ulcerative colitis. She was asymptomatic and took sulfasalazine (Azulfidine). Results of the examination and colon biopsies were normal. Two days later she had abdominal cramps and bloody diarrhea. The sigmoidoscopy was repeated and revealed erythema and multiple ulcers in the distal rectal and lower sigmoid regions. Stool cultures were negative for pathogenic bacteria. A regimen of hydrocortisone enemas (Cortenema) and ciprofloxacin hydrochloride (Cipro) was started. Another sigmoidoscopy four days later showed some healing but a new rectal ulcer. Prednisone and metronidazole were added to her treatment program. Within a week she felt well, and the drugs were stopped. She has been asymptomatic for four months.

Discussion

To prevent infection during endoscopic procedures, guidelines for cleaning and disinfection have been published.[4,5] After its use, the flexible sigmoidoscope should be immediately cleaned with a detergent or cleaning solution and then washed with water. Next, the instrument is immersed in a disinfectant such as glutaraldehyde for a given period of time, then rinsed free of residual germicide, and finally air dried before storage. This entire process can be done by nurses, technicians, or by an automatic washing machine.

In 1986, 13 cases of patients who had proctitis after an initial normal colonoscopic examination were described.[6] The suggested cause was residual cleaning solution in the colonoscope air channel. Two years later, a similar case was reported.[7] In 1992 possible causes of bloody diarrhea in ten patients following normal sigmoidoscopic examinations in an outpatient hospital clinic were investigated.[8] The investigators found that a technician had inadequately cleaned the sigmoidoscopes; they surmised that residual glutaraldehyde in the cleaned instrument had led to acute proctitis. The same authors administered glutaraldehyde to rat colons and noted acute mucosal damage with microscopic inflammation and necrosis. In another report, six patients with acute proctitis after a normal sigmoidoscopic examination were studied.[9] Rectal biopsies showed inflammation, at times accompanied by necrosis and pseudomembranes. Further investigation showed a breakdown in the disinfection cycle of an automatic washing machine and later inadequate air drying of the sigmoidoscopes by the endoscopy staff, so that residual glutaraldehyde remained in the cleaned instrument. More recently, four patients have been described in whom acute proctitis developed after a normal sigmoidoscopic examination.[10] Rectal biopsies demonstrated acute, severe inflammation similar to that seen in acute ischemic injury. Investigation into the cause revealed that cleaning pro-

cedures did not dry the sigmoidoscope channels completely, thus leaving residual glutaraldehyde that was later sprayed onto rectal mucosa. In one patient, the glutaraldehyde was found in the tubing that connected the water bottle to the flexible sigmoidoscope.

Our three patients had the previously described features of glutaraldehyde proctitis. They were asymptomatic before the examination, and the results of the examination were normal. Yet, within hours of the examination, they had acute tenesmus and bloody diarrhea. They were treated with various medications, and all became well within a brief period of time and have remained so. We have since reviewed our cleaning protocol with staff nurses, making certain that the sigmoidoscope channels are flushed free of glutaraldehyde before drying.

Although glutaraldehyde proctitis is rare (we have recognized 3 cases in about 2,400 examinations over the past year), this complication of flexible sigmoidoscopy should be remembered to avoid diagnostic confusion with proctitis due to infection or inflammatory bowel disease. Patients may feel ill, but the prognosis is good, with complete recovery in a few weeks. Various methods of treatment have been used, including oral 5-aminosalicylic acid,[9] antibiotics,[10] steroid enemas,[10] and combinations thereof. It is unclear as to which drug should be recommended, and some patients get well without any specific medication.

Staff members with the responsibility for cleaning instruments should be well trained, disciplined, and thorough.[11] Cleaning and disinfection methods should be reviewed periodically to prevent infection or mucosal damage from disinfectant solutions.

A new type of sigmoidoscope has recently been introduced that avoids cleaning procedures entirely (Vision System, Vision Sciences, Inc, Natick, Massachusetts). A core endoscope is inserted into an Endosheath that contains the usual three channels for biopsy and suction, air, and water. After its use, the Endosheath and its covering are discarded and a new sheath installed for the next patient. The cost-effectiveness and role of this new system are currently unclear.

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Adult Obstructive Sleep Apnea With Secondary Enuresis

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SLEEP APNEA represents a group of sleep-associated respiratory disorders. Apneas—defined as the cessation of airflow for at least 10 seconds—either central, obstructive, or mixed, may occur hundreds of times a night, resulting in asphyxia and disrupted sleep.[1] Although patients with the obstructive sleep apnea syndrome (OSAS) typically are middle-aged, obese men with a short, stout neck, a small posterior oropharynx, a history of snoring, and daytime somnolence, this condition may also be seen in children and nonobese adults.

Affected adults characteristically experience an insidious onset of daytime hypersomnolence. As the disorder progresses, they may have deteriorating memory, concentration, and judgment and personality and mood changes.[1] Family members and bed partners are often the first to recognize these changes, and they relate a history of loud snoring and periodic apneas or choking episodes.[2]

The mortality rate of untreated OSAS has been correlated with apneic events and may be as high as 37%.[3] Untreated OSAS may lead to motor vehicle accidents, polycythemia, systemic hypertension, left ventricular dysfunction, myocardial infarction, cardiac arrhythmias, pulmonary hypertension, cor pulmonale, cerebrovascular accidents, and sudden death.[2,4] Various less commonly appreciated symptoms have been reported, including night sweats, nocturia, nocturnal gastroesophageal reflux, decreased libido, impotence, morning headache, anoxic seizures, and hearing impairment.[4-7] We present a case of obstructive sleep apnea in a patient who presented with the unusual manifestation of secondary enuresis.

Report of a Case

The patient, a previously healthy 26-year-old man, was seen for a general physical examination. A review of systems revealed an 18-kg (40-lb) weight gain over the preceding four to six months. In addition, the patient reported three episodes of enuresis occurring over the previous

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